



E85 Emissions Study

Subcontractor

Coordinating Research Council, Inc.

Principal Investigator

Jack D. Benson Fuels and Lubricants Department GM Research and Development Center 30500 Mound Road 1-6, Box 9055 Warren, MI 48090-9055 (810) 986-1919

DOE Project Manager

Michael Gurevich U.S. Department of Energy CE-332, MS 6A-116/Forrestal 1000 Independence Avenue, SW Washington, D.C. 20585 (202) 586-6104

NREL Technical Monitor

Brent Bailey NREL 1617 Cole Boulevard Golden, CO 80401 (303) 275-4468

Performance Period

10/93-12/95

NREL Subcontract Administrator

Scott Montgomery (303) 275-3193

Subcontract Number

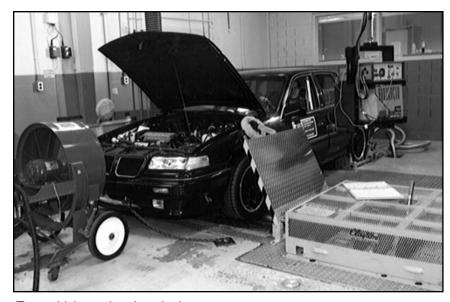
AF-2-11296-06

Objective

To evaluate the effect of 85% ethanol (EtOH) blended with 15% gasoline fuel on exhaust and evaporative emissions, toxics, and reactivity in prototype flexible fuel vehicle (FFV) and variable fuel vehicle (VFV) models.

Approach

Three prototype original equipment manufacturer (OEM) vehicles calibrated to run on gasoline or any mixture of EtOH and gasoline up to 85% EtOH will be emission tested on an industry average gasoline (IAG), a California Phase 2 reformulated gasoline (RFG), and E85



Test vehicle on the chassis dynamometer

(85% EtOH, 15% gasoline) blended with the California Phase 2 RFG. Tailpipe and engine-out mass emissions and tailpipe species will be measured during the Federal Test Procedure (FTP). Hot-soak evaporative emission tests will also be run with each fuel.

Accomplishments

All tests have been completed and the data are being analyzed.

Future Direction

These same vehicles and fuels will be tested in a dynamometer study of off-cycle exhaust emissions.

Publications

Benson, J.D. 1995. "Emissions from E85 Ethanol Fuel and Gasoline in Flexible/Variable Fuel Vehicles." Presented at the 1995 SAE International Congress & Exposition, Detroit, MI. March.

Benson, J.D. 1995. "Emissions with E85 and Gasolines and Flexible/Variable Fuel Vehicles," SAE Paper #952508.

Benson, J.D. 1995. CRC Auto/Oil Technical Bulletin #16.